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Foreword

This issue of *COMSAT Technical Review* presents a series of papers related to the Direct Broadcast Satellite System planned by the Satellite Television Corporation (STC), a COMSAT subsidiary.

The papers describe the proposed system, articulate some of the issues surrounding introduction of this new service, and outline its broad scope.

The success of STC's satellite-to-home pay television service will depend heavily on a careful combination of various critical technological elements. Recent developments in spacecraft components such as long life, reliable and efficient high power amplifiers and satellite antennas producing precisely shaped beams are of great importance. Equally significant will be the availability of high performance, ultra reliable, low cost receiving and decoding equipment which will permit individual control of transmissions received by the subscribers.

After the unparalleled advances of the past fifteen years in international and domestic satellite communications, in which COMSAT has played a leading role, STC is now prepared to face with confidence the challenge posed by this new broadcasting satellite service.

J. V. Charyk

Index: direct broadcast satellite system, frequency allocation, broadcasting satellite

A direct broadcast satellite system for the United States

L. M. KEANE, Editor

(Manuscript received August 18, 1981)

Abstract

This series of papers describes the first commercial direct broadcast satellite (DBS) service proposed for the United States. System elements are defined as they are presently conceived, and the major engineering tradeoffs made during development of the system configuration are discussed. Services to be offered and their expected characteristics are indicated. Orbit and spectrum utilization matters are considered in connection with worldwide radio conferences dealing with DBS planning. Analyses and measurements to determine the most effective means by which DBS and other domestic (terrestrial fixed) services can band share are also presented.

Introduction

On December 17, 1980, Satellite Television Corporation (STC)* applied for authorization from the U.S. Federal Communications

* STC is a wholly owned subsidiary of the Communications Satellite Corporation (COMSAT).

Abbreviations and acronyms used in this series of papers are defined on Page 265.